February 16, 2010

Ephraim King, Director
Office of Science and Technology
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 4301T
Washington, D.C. 20460

RE: Allowing a variance from numeric nutrient standards for municipal discharges using a cost cap based on a percent of median household income

Dear Mr. King:

The Montana Department of Environmental Quality (MT DEQ) believes that numeric nutrient criteria are crucial elements in the protection of state surface waters and their designated beneficial uses. As an illustration of this, we adopted numeric nutrient standards on the Clark Fork River in 2002, and EPA has highlighted those standards in its nutrient-criteria development guidance documents. MT DEQ has spent nearly 10 years developing and refining numeric nutrient standards for wadeable streams. We continue to refine those criteria while we develop nutrient criteria for large rivers, lakes, and other surface waters. Through this work it became clear that scientifically-based criteria in some areas of Montana would be quite stringent and difficult to achieve (e.g., 0.03 mg TP/L and 0.3 mg TN/L in the Middle Rockies ecoregion). Therefore, MT DEQ began considering a means by which the criteria could be implemented in a more staged manner, allowing time for our communities to upgrade their wastewater treatment and for nutrient removal technologies to improve and become less expensive. This approach would maintain the designated recreational and aquatic life uses while incorporating variances to make incremental progress towards achieving the water quality standards goal.

MT DEQ has crafted an approach specific to pubic municipalities that I believe will achieve, over time, the goal of cleaner water; however, there remains an issue related to our approach for which EPA has not yet provided a definitive response. The purpose of this memo is to solicit a response from EPA on this unresolved matter, which is detailed below. Specifically, MT DEQ is requesting that EPA Headquarters provide the State with a written response to this issue by March 8, 2010, so that we can provide an update to the State's Nutrient Work Group (Montana's nutrient standards advisory committee) at its March 15 meeting.

As noted, MT DEQ realized that scientifically-derived numeric nutrient criteria would be quite stringent in some regions of Montana, and we began to explore implementation options for MPDES permit holders who would be required to meet the nutrient standards once they were adopted. The one viable option we identified, under state and federal law, was a temporary variance from the standards. Variances are allowed under federal statute (40 CFR 131.13), and EPA indicates that such variances are justifiable if meeting a water quality standard would result

in substantial and widespread economic impacts to a community (*Interim Economic Guidance for Water Quality Standards*, 1995; referred to hereafter as the *EGWQS*). In 2006 we hired an independent consulting firm to review the *EGWQS* and other EPA economic analysis guidance documents and approaches. The consultant concluded that the *EGWQS* was the most appropriate guidance to follow when evaluating substantial and widespread economic impacts for determining eligibility for a variance.

The *EGWQS* is unambiguous on some subjects, while silent on others. Specifically, it is clear that two test conditions must be met (an economic impact must be substantial and widespread) before a variance can be granted to a community. Also clear is the manner in which cost is calculated: "The second step is to calculate the total annual pollution control cost per household, which includes the cost of the project and existing pollution control costs," (page 2-2, *EGWQS*). Thus, the *EGWQS* explicitly indicates that, for evaluation purposes, current annual expenditure for wastewater is to be added to the proposed project's annualized cost. In contrast, the *EGWQS* is completely silent on what the remedy should be if a community has demonstrated that substantial and widespread economic impacts would occur. The only hint as to what a remedy *might* be is found in Table 2-2 of the *EGWQS*, which is reproduced below:

Table 2-2
Assessment of Substantial Impacts Matrix

Secondary Score	Municipal Preliminary Screener		
	Less than 1.0 Percent	Between 1.0 and 2.0 Percent	Greater than 2.0 Percent
Less than 1.5	?	X	X
Between 1.5 and 2.5	✓	?	X
Greater than 2.5	✓	✓	?

- √ Community is not expected to incur substantial impacts as a result of the pollution control project.
- **?** Interpretation will rely on the additional information presented by the State/discharger (i.e. the results of the "widespread" analysis). Communities falling exactly in the middle box should, depending upon their Municipal Preliminary Screener and Secondary Scores, move to an adjacent box.
- **X** The community will incur substantial impacts.

Table 2-2 and *EGWQS* supporting text say that if the total of current user wastewater fees plus additional fees associated with the upgrade (both annualized) were to exceed 2% of the community's median household income (MHI), then in most circumstances that community will incur substantial economic impacts. A virtually identical table (Table 3) is found on page 41 of

EPA's document *Combined Sewer Overflows – Guidance to Financial Capability and Schedule Development* (1997), and is shown below:

FINANCIAL CAPABILITY MATRIX
Table 3

Permittee Financial Capability Indicators Score (Socioeconomic, Debt and Financial Indicators)	**Residential Indicator** (Cost Per Household as a % of MHI)		
	Low (Below 1.0 %)	Mid-Range (Between 1.0 and 2.0%)	High (Above 2.0 %)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (Between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden

Like Table 2-2 from the *EGWQS*, Table 3 above also shows that if the total of current user wastewater fees plus additional fees associated with the upgrade (both annualized) were to exceed 2% of the community's MHI, then in most circumstances that community will incur a high financial burden.

Since the *EGWQS* is silent on what options are available to a state regulatory agency if a community has demonstrated substantial and widespread impacts, MT DEQ developed its own remedy. Logically, if a wastewater cost >2% MHI is generally considered by EPA to be a high financial burden, then clearly a variance granted to a community to prevent such hardship should be set to something < 2% MHI. From the matrices presented in Tables 2-2 and 3 above, a nutrient standards variance cost-cap should probably fall between 1 and 2%.

In fall 2008 MT DEQ began monthly meetings with interested parties on this subject. These included participants from municipalities, wastewater engineering firms, environmental groups, and industries. Meeting participants agreed on the economic evaluation process; however, the *remedy* — the cost cap — remained unresolved. We examined a representative sample of current wastewater rates statewide and found that larger Montana communities were usually paying far below 1% MHI, while smaller communities were (on average) below, but much closer to 1% MHI. Meeting participants clearly articulated that whatever the remedy, they preferred a

single, consistent approach for all communities — and MT DEQ agrees with them on this point. Wastewater engineers in particular lauded the consistent endpoint approach as it would be very difficult for them to complete a preliminary engineering design for a wastewater upgrade if the ultimate endpoint was unknown, or could only be known very late in the regulatory process. By early 2009, workgroup participants indicated that 1% of MHI was an acceptable cost cap for a variance from meeting nutrient standards. As noted above, this would result in moderate to substantial rate increases for most Montana communities.

It is important to note that the variance process only applies to numeric nutrient standards[1] (e.g., total N [TN] and total P [TP]) and not to other water quality standards. As outlined, it would work something like this:

> **Scenario A**[2]: A community currently pays 0.5% of MHI for wastewater. Meeting the numeric nutrient standards would require a significant upgrade, bringing the estimated cost to 3.5% MHI. Assuming the community demonstrates that meeting the numeric nutrient standards would result in substantial and widespread economic impacts, they could receive a variance for TN and TP. In this case, the community would be expected to pay an additional 0.5% MHI toward wastewater upgrades until they reach the cost cap of 1.0% MHI.
>
> **Scenario B**: A community is already paying 1.9% of MHI for wastewater. If the community demonstrated that meeting additional numeric nutrient standards would result in substantial and widespread economic impacts, they could receive a variance for TN and TP. Since the community is already paying more than 1.0% of MHI (which is above the proposed cost cap), MT DEQ would cap their nutrient concentration discharges at current levels.

Again, the variance procedure in Montana (75-5-313, Montana Code Annotated) is specific to numeric nutrient standards and would allow a variance from numeric nutrient standards for up to 20 years; however, the variance would be subject to review and re-justification as part of routine water-quality standards reviews. Thus, if a cost effective means to significantly lower nutrients in a wastewater discharge comes on the scene during the 20-year variance period, the permittee would be expected to install it (i.e., the justification for the variance would have changed). This ensures that communities move steadily toward the nutrient standards as technology changes.

Obviously, 1% is at the low end of the range within which a cost-cap could be established if a nutrient standards variance were granted. Informal discussions with EPA Headquarters in 2009 seemed to suggest that EPA would only approve a cost cap set at ≥ 2% MHI; this appears to stem from EPA's prior experience with combined sewer overflows (CSOs). As far as we can

[1] Please note that toxicity-based ammonia water quality standards, the human-health based nitrate (nitrate + nitrite), and nitrite water quality standards are not included in the numeric nutrient standards.
[2] Both scenarios assume the community is currently meeting all National Secondary Treatment Standards, which is true for the vast majority of Montana communities.

ascertain, EPA's only prior use of the *EGWQS* process was in addressing the cost of upgrading CSOs in large urban areas (e.g., Boston). EPA's other guidance on the subject (*Combined Sewer Overflows – Guidance to Financial Capability and Schedule Development* [1997]) states that most CSO problems are concentrated in the northeast and Great Lakes regions — the most urbanized region of the country. We do not believe that these urbanized areas are appropriate comparisons to Montana for several reasons. First, Montana is largely a rural state, ranked 44th in the nation based on population size (ca. 960,000). Montana ranked 39th in the nation in per-capita income (2008 data). The lower the per-capita income, the more significant is the impact of increased cost for basic services such as sewer. In contrast, the majority of northeast and Great Lakes states — where CSO issues are concentrated — are in the top third by per-capita income; for example Massachusetts, New York, New Jersey, Rhode Island, and Illinois. MT DEQ believes it is reasonable to consider financial capability as a factor in setting the cost cap. The approach is consistent with EPA guidance, which recognizes that for dischargers with weak financial capability, costs ranging from 1 to 2 % of MHI would constitute a high burden. If EPA really expects an increase to 2% of MHI in Montana communities where nutrient standards variances are granted, my staff and I believe that adoption of numeric nutrient criteria for Montana could be in jeopardy.

It should also be noted that in a number of circumstances pushing communities to pay >2% MHI for waste treatment will not necessarily solve the excess nutrient problem. In Montana, there is still a large nonpoint nutrient source component to address, which MT DEQ is working on, and there are the limits of practical wastewater technology. Current limits of practical wastewater technology are generally agreed to be somewhere around 0.05 mg TP/L and 3 mg TN/L. If a receiving stream does not have substantial dilution potential, these end-of-pipe concentrations would still not meet many of our science-based criteria. Our seven largest communities have populations between 21,182 and 104,000, and in at least one of them (Missoula) our calculations indicate that the limits of practical wastewater technology would probably be achieved at an MHI of about 1.2%. All these factors highlight the fact that fixing CSO problems is not the same as fixing excess nutrient problems, and using the CSO experience as the sole point of comparison is inappropriate.

In closing, I would like EPA to provide a written response to MT DEQ describing EPA's position on our cost-cap remedy, hopefully one that supports our position as restated below:

> *For communities where substantial and widespread economic impacts would result from compliance with numeric nutrient standards, and a temporary variance is to be granted, MT DEQ proposes a cost cap of 1% of the community's median household income as the remedy (i.e., the annualized total of current user wastewater fees plus additional fees associated with the upgrade). The approach would be the same for all Montana communities.*

MT DEQ's approach follows EPA's *EGWQS* guidance for evaluating substantial and widespread impacts and ensures that well-developed implementation procedures accompany the proposed numeric nutrient criteria. EPA has identified state adoption of numeric nutrient criteria as a high

priority. If EPA wants states to succeed in this effort, I believe that EPA must allow state flexibility to establish a reasonable cost cap for implementing discharger-specific variances.

Thank you for your consideration; I look forward to your response.

Sincerely,

Richard H. Opper
Director

c: Ms. Carol Rushin, USEPA Region VIII
Tina Laidlaw, USEPA Region VIII - Montana Operations Office